In the Specification

Kindly replace paragraph [0010] with the amended paragraph below:

In a preferred aspect, the integration step comprises determining the variable Z(h) of the radar observable in mm^6/m^3 as a function of the altitude h on the basis of the radar image, and determining the mean diameter Dm(h) of the particles by solving the following equation:

$$[[\frac{fD_m}{fh} \equiv -0.25k_{eff}aD_m^{b-5}10^{-18}Z + \left(\frac{11fZ}{6Zfh}\right)D_m \qquad (2)]]$$

$$\underline{\frac{\delta D_m}{\delta h} \equiv -0.25k_{eff}aD_m^{b-5}10^{-18}Z + \left(\frac{11\delta Z}{6Z\delta h}\right)D_m} \qquad \underline{(2)}$$

where:

Z is the radar observable to be inverted in mm^6m^{-3};

D_m is in meters (m);

a and *b* are coefficients specific to particles of the "aggregate" type; for example, the coefficient *a* is equal to 35184 and the coefficient *b* is equal to 3.16;

k_{eff} is the coefficient of effectiveness of the aggregation process to be adjusted, said coefficient k_{eff} being equal to 0.3.

Kindly replace paragraph [0017] with the amended paragraph below:

Selected steps include:

1 – Particle size distribution expressed in "equivalent melted diameter" is assumed to be exponential, i.e.:

$$N(D)=N_0\exp(-4D/D_m) \qquad (1)$$

where *N(D)* is the concentration of particles per cubic meter (m^3) and per diameter range, and

N_0 and D_m are the two parameters that characterize distribution.

2 – The top h_{max} and the base h_{min} of the layer of solid precipitation are determined;

a. h_{max} is the maximum altitude of the measured reflectivity profile $Z(h)$.

b. h_{min} is either the altitude of the isotherm 0°C if the ground-level temperature is positive, or it is ground level if the ground-level temperature is negative.

3 – The profile of the parameter Dm(h) in the range h_{max} to h_{min} is then determined by resolving the following differential equation:

[[$$\frac{fD_m}{fh} \equiv -0.25k_{eff}aD_m^{b-5}10^{-18}Z + \left(\frac{11fZ}{6Zfh}\right)D_m \qquad (2)$$]]

$$\underline{\frac{\delta D_m}{\delta h} \equiv -0.25k_{eff}aD_m^{b-5}10^{-18}Z + \left(\frac{11\delta Z}{6Z\delta h}\right)D_m} \qquad \underline{(2)}$$

where:

- Z is the radar observable to be inverted in mm^6m^{-3};

- D_m is in meters (m);

- a and b are coefficients specific to particles of the "aggregate" type, equal respectively to 35184 and to 3.16 on the basis of the observations of J.D. Locatelli and P.V. Hobbs, *Fall speeds and masses of solid precipitation particles*, J. Geo-phys. Res., 79, 2185 - 2197 (1974), the subject matter of which is incorporated herein by reference;

- k_{eff} is the coefficient of effectiveness of the aggregation process to be adjusted (the value $k_{eff} = 0.3$ seems correct).

4 – The integration of (2) takes place from the top, where the boundary condition is

expressed by fixing the total number of particles n_T (or the number of ice-forming nuclei activated at the top of the cloud). It is possible to take $n_T\ (h_{max}) = 10^6\ m^{-3}$, which makes it possible to express the boundary condition $D_m(h_{max})$ as:

$$Dm(H_{max})=25.4\ 10^{-18}(Z(h_{max}/n_T(h_{max}))^{1/6} \qquad (3)$$

5 – Once the profile $D_m(h)$ from h_{max} to h_{min} has been determined, the profiles of the other parameters of interest are computed by the following expressions:

a. Profile of N_0: $N_0(h)=102.10^{-12}Z(h)/D_m(h)^7$

b. Profile of the total number of particles $n_T(h)$ (in m^{-3}): $N_T(h)=102.10^{-12}Z(h)/D_m(h)^6$

c. Profile of the ice water content IWC(h) (in g/m^3):

$IWC(h)=1.25.10^{-12}Z(h)/D_m(h)3$

d. Profile of the solid precipitation rate R(h) (mm/h equivalent melted). By using the terminal fall velocity determined by Locatelli and Hobbs for aggregates: (v_T=107.6 $D^{0.65}$ (D in m)), $R(h)$ is expressed by:

$R(h)=4.698.10^{-10}Z(h)/D_m(h)^{2.35}$